

AIRSHIP AND METHOD OF OPERATION

Abstract of the Disclosure

An airship has a generally spherical shape and has an internal envelope for containing a lifting gas such as Helium or Hydrogen. The airship has a propulsion and control system that permits it to be flown to a desired loitering location, and to be maintained in that location for a period of time. In one embodiment the airship may achieve neutral buoyancy when the internal envelope is as little as 7 % full of lifting gas, and may have a service ceiling of about 60,000 ft. The airship has an equipment module that can include either communications equipment, or monitoring equipment, or both. The airship can be remotely controlled from a ground station. The airship has a solar cell array and electric motors of the propulsion and control system are driven by power obtained from the array. The airship also has an auxiliary power unit that can be used to drive the electric motors. The airship can have a pusher propeller that assists in driving the airship and also moves the point of flow separation of the spherical airship further aft. In one embodiment the airship can be refuelled at altitude to permit extended loitering.